This paper reports on a series of lab experiments to evaluate the application of modelling notations in automation and control engineering. The focus of this evaluation was on two aspects: 1) analyzing and modelling the problem or application and 2) implementing its solution into a control program in IEC 61131-3. The evaluated notations are the Unified Modeling Language (UML) and the Idiomatic Control Language (ICL): UML as nearly standard in computer science and ICL as powerful modelling notation from the distributed control systems world (DCS).